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REMARKS

The specification has been amended to reference a related application. Claims 19-26 have been cancelled, without prejudice or disclaimer. Claims 1, 12 and 15 have been amended, without prejudice or disclaimer. New claims 27-33 have been added. No new matter has been introduced. Twenty-five (25) claims are pending and remain for consideration.

ELECTION/RESTRICTION

Claims 19-26 have been cancelled, without prejudice or disclaimer, in accordance with the Final Restriction and the withdrawal of the claims from further consideration, as set forth in paragraph 1, page 2 of the Official Letter. The withdrawal of the restriction of the species shown in Figures 2, 4 and 6 is hereby acknowledged.

IN THE SPECIFICATION

The specification has been amended to make reference to a related application, in accordance with paragraph 3, page 2 of the Official Letter.

IN THE CLAIMS35 U.S.C. § 102

Claims 1-7, 10, 15, and 17-18 are rejected under 35 U.S.C. § 102(b), as being anticipated by U.S. Patent No. 5,925,165, issued to Pflugl.

Claim 1 has been amended to recite a furnace having an exhaust positioned at the downstream end of the furnace and in communication with the downstream end of the furnace so that combustion gases in the furnace are exhausted only from the exhaust at the downstream end of the furnace. This increases the residence time of combustion gases, thereby providing a more cost effective heating and melting of glass-forming material. There is also a lower probability of glass-forming materials being entrained with the combustion gases.

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Pflugl discloses an exhaust 25 positioned between an upstream end (to the left when viewing Fig. 1) of the furnace and a downstream end (to the right when viewing Fig. 1) of the furnace, and an exhaust 38 positioned at the downstream end of the furnace. However, Pflugl fails to disclose an exhaust positioned at the downstream end of the furnace and in communication with the downstream end of the furnace so that combustion gases in the furnace are exhausted only from *the exhaust at the downstream end of the furnace*. In the absence of such teaching, claim 1 should be allowable over Pflugl.

Claims 2-7 and 10 depend from claim 1 and should be allowable for at least the same reason(s) as claim 1.

Claim 15 has been amended to recite a glass-melting furnace having an upstream end with a charge end wall, a downstream end with a discharge end wall, and an exhaust in communication with the furnace at the downstream end of the furnace *so that combustion gases in the furnace are exhausted only from the exhaust at the downstream end of the furnace*. In the absence of such teaching, claim 15 should be allowable over Pflugl.

Claims 17-18 depend from claim 15 and should be allowable for at least the same reason(s) as claim 15.

Claims 1-6 and 8 are also rejected under 35 U.S.C. § 102(b), as being anticipated by U.S. Patent No. 3,552,949, issued to Boyle. This rejection is respectfully traversed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Claim 1 recites a glass-melting furnace comprising an exhaust positioned downstream of a burner and in communication with the downstream end of the furnace.

Boyle discloses metal melting furnaces. One melting furnace has a charge opening 5 at an upstream end (to the left when viewing Fig. 1) and a pouring opening

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7 at a downstream end (to the right when viewing Fig. 1). See lines 8-28, col. 2. Another melting furnace has a charge opening 33 at an upstream end (to the right when viewing Fig. 3) and a pouring opening 29 at a downstream end (to the left when viewing Fig. 3). See line 75, col. 3 through line 13, col. 4. Exhausts 3, 33 are positioned upstream of burners 11, 31, in communication with the upstream end of each furnace.

Boyle fails to disclose *a glass melting furnace*. In addition, Boyle fails to disclose an exhaust *positioned downstream of a burner and in communication with the downstream end of the furnace*. Since Boyle fails to disclose each and every element, as set forth in claim 1, claim 1 should be allowable over Boyle.

Claims 2-6 and 8 depend from claim 1 and should be allowable for at least the same reason(s) as claim 1. In addition, claim 4 recites burners positioned upstream of the exhaust. Boyle fails to disclose burners *positioned upstream of the exhaust*. Claim 5 requires all burners to be positioned upstream of the exhaust. Boyle fails to disclose burners, all of which are *positioned upstream of the exhaust*. Claim 8 requires the exhaust to be disposed at the discharge end wall of the furnace. The exhaust disclosed by Boyle is not *disposed at the discharge end wall of the furnace*. Since Boyle fails to disclose these additional elements, claims 4, 5 and 8 should be allowable over Boyle.

35 U.S.C. § 103

Claim 12 is rejected under 35 U.S.C. § 103(a), as being unpatentable over Pflugl.

Claim 12 has been amended to recite a furnace having an exhaust in communication with the furnace, wherein the exhaust has a centerline that is positioned at least about 70 percent of the distance from a charge end wall of the furnace to a discharge end wall of the furnace so that combustion gases in the furnace are exhausted only from the exhaust having its centerline positioned at least about 70 percent of the distance from the charge end wall of the furnace to the discharge end wall of the furnace.

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Pflugl fails to disclose an exhaust positioned so that combustion gases in the furnace are exhausted only from *the exhaust at the downstream end of the furnace*. In the absence of such teaching, claim 12 should be allowable over Pflugl.

Claims 8 and 16 are rejected under 35 U.S.C. § 103(a), as being unpatentable over Pflugl in view of U.S. Patent No. 4,481,024, issued to Bly.

Claims 8 and 16 depend from claims 1 and 15, respectively, and should be allowable over Pflugl for at least the same reason(s) as claims 1 and 15, as set forth above. Bly fails to cure the deficiencies in Pflugl. Hence, claims 8 and 16 should be allowable over Pflugl in view of Bly.

Claims 9, 11 and 14 are rejected under 35 U.S.C. § 103(a), as being unpatentable over Pflugl in view of U.S. Patent No. 6,519,973, issued to Hoke.

Claims 9, 11 and 14 depend from claim 1 and should be allowable over Pflugl for at least the same reason(s) as claim 1, as set forth above. Hoke fails to cure the deficiencies in Pflugl. Hence, claims 9, 11 and 14 should be allowable over Pflugl in view of Hoke.

Claim 13 is rejected under 35 U.S.C. § 103(a), as being unpatentable over Pflugl in view of Hoke and further in view of Bly.

Claim 13 depends from claim 12 and should be allowable for at least the same reasons as claim 12, as set forth above. Hoke and Bly fail to cure the deficiencies in Pflugl. Hence, claim 13 should be allowable over Pflugl in view of Hoke and Bly.

New Claims

New claim 27-33 have been added. These claims recite a furnace having at least one exhaust positioned so that combustion gases in the furnace are exhausted only from that at least one exhaust. None of the prior art of record discloses or teaches the elements set forth in the new claims. Consequently, the new claims should be allowable as presented.

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CONCLUSION

In view of the above remarks and argument, it is believed that the application is in condition for allowance. Accordingly, a Notice of Allowance is respectfully requested.